

# GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.1770801 TIP NO.: R-3427 COUNTY: YADKIN

DESCRIPTION(1): BRIDGE # 30 AT U.S. 601 AND SOUTH DEEP CREEK

◆ **INFORMATION ON EXISTING BRIDGES** Information obtained from  Field Inspection  
 Microfilm (Reel:                    ) Position:                    )  
 Other

COUNTY BRIDGE NO. 30 BRIDGE LENGTH 190' NO. BENTS 5 NO. BENTS IN: CHANNEL 1 FLOODPLAIN 5

FOUNDATION TYPE: END BENTS: RC SPILL THRY/ INT. BENTS: RC POST & WEB

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: NONE

INTERIOR BENTS: NONE

CHANNEL BED: NONE

CHANNEL BANKS: NONE

◆ **EXISTING SCOUR PROTECTION:**

TYPE(3): RIP RAP

EXTENT(4): ON FLANKS OF APPROACH EMBANKMENT, AND UNDER END BENT 1 & 2

EFFECTIVENESS(5): GOOD

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): NONE

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): SAND A-2, SS-3,

CHANNEL BANK MATERIAL(8) (Sample Results Attached): CLAY, SS-1,

FOUNDATION BEARING MATERIAL(9): ROCK

CHANNEL BANK COVER(10): BRUSH, WILLOWS,

FLOOD PLAIN WIDTH(11): 700'

FLOOD PLAIN COVER(12): BRUSH AND PASTURE

STREAM IS:  DEGRADING  AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS:

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◆  
◆ **DESIGN INFORMATION CONT.**

CHANNEL MIGRATION TENDENCY(14): MOD.

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (15):

Bent	Boring	Top of Alluv. Elevation	Pred. Q500 Scour	Pred. Q500 Scour Elevation	Weathered Rk Elevation	Rock Elevation	Adjusted Scour	Adjusted Scour Elevation
B1	A	754.21	25.6'	728.61'	dnf	733.41'	20.8'	733.41'
B1	B	752.19'	25.6'	726.59'	733.29'	730.19'	18.9'	733.29'
B2	A	752.93'	25.6'	727.33'	740.13'	737.03'	14.93'	738.00'
B2	B	752.69'	25.6'	727.09'	739.29'	728.49'	14.69'	738.00'

REPORTED BY: J.K.STICKNEY, R.Q. CALLAWAY DATE: 12/19/02

**INSTRUCTIONS**

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE GIVING ROUTE NUMBER AND BODY OF WATER CROSSED.
- (2) NOTE ANY EVIDENCE OF SCOUR AT THE EXISTING END BENTS OR ABUTMENTS (UNDERMINING, SLOUGHING, SCOUR LOCATIONS DEGRADATIONS, ETC.)
- (3) NOTE ANY EXISTING SCOUR PROTECTION (RIPRAP, ETC.)
- (4) DESCRIBE THE EXTENT OF ANY EXISTING SCOUR PROTECTION.
- (5) DESCRIBE WHETHER OR NOT THE SCOUR PROTECTION APPEARS TO BE WORKING.
- (6) NOTE ANY DAMS, FALLEN TREES, DEBRIS AT BENTS, ETC.
- (7) DESCRIBE THE CHANNEL BED MATERIAL; A SAMPLE SHOULD BE TAKEN FOR GRAIN SIZE DISTRIBUTION, ATTACH LAB RESULTS.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL; A SAMPLE SHOULD BE TAKEN FOR GRAIN SIZE DISTRIBUTION, ATTACH LAB RESULTS.
- (9) DESCRIBE THE FOUNDATION BEARING MATERIAL
- (10) DESCRIBE THE BANK COVERING (GRASS, TREES, RIPRAP, NONE, ETC.)
- (11) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (12) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (13) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING.
- (14) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (15) GIVE THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION EXPECTED OVER THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS). THIS CAN BE GIVEN AS AN ELEVATION RANGE ACROSS THE SITE, OR ON A BENT BY BENT BASIS WHERE VARIATIONS EXIST. DISCUSS RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY; CORE RECOVERY PERCENTAGE; PERCENT RQD; DIFFERENTIAL WEATHERING; SHEAR STRENGTH; OBSERVATIONS AT EXISTING STRUCTURES; OTHER TESTS DEEMED APPROPRIATE; AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.